

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H01L21/00 H01L21/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 401 131 A (LAWSON ROBERT M) 30 August 1983 (1983-08-30) column 2 - column 3; figures 2,3 abstract	1, 18, 22, 32
A	US 2002/162570 A1 (CAVAZZA GILBERT) 7 November 2002 (2002-11-07) paragraph '0022! - paragraph '0036!; figures 1-3	1, 18, 22, 32
A	DE 196 29 705 A (SCHEERER JOACHIM DR ; GRUETZEDIEK HARTMUT DR (DE)) 29 January 1998 (1998-01-29) abstract column 5 - column 7; figures 1,2	1, 18, 22, 32
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
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- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

Date of the actual completion of the International search

17 September 2004

Date of mailing of the International search report

29/09/2004

Name and mailing address of the ISA

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Authorized officer

Paisdor, B

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/051159

**C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 5 979 475 A (OKA HITOSHI ET AL)            9 November 1999 (1999-11-09)            cited in the application            abstract; figures            1A,1B,3A,3B,5A,5B,8A,8B,18,20,21            column 10 - column 12            -----</p>	<p>1,18,22,            32</p>

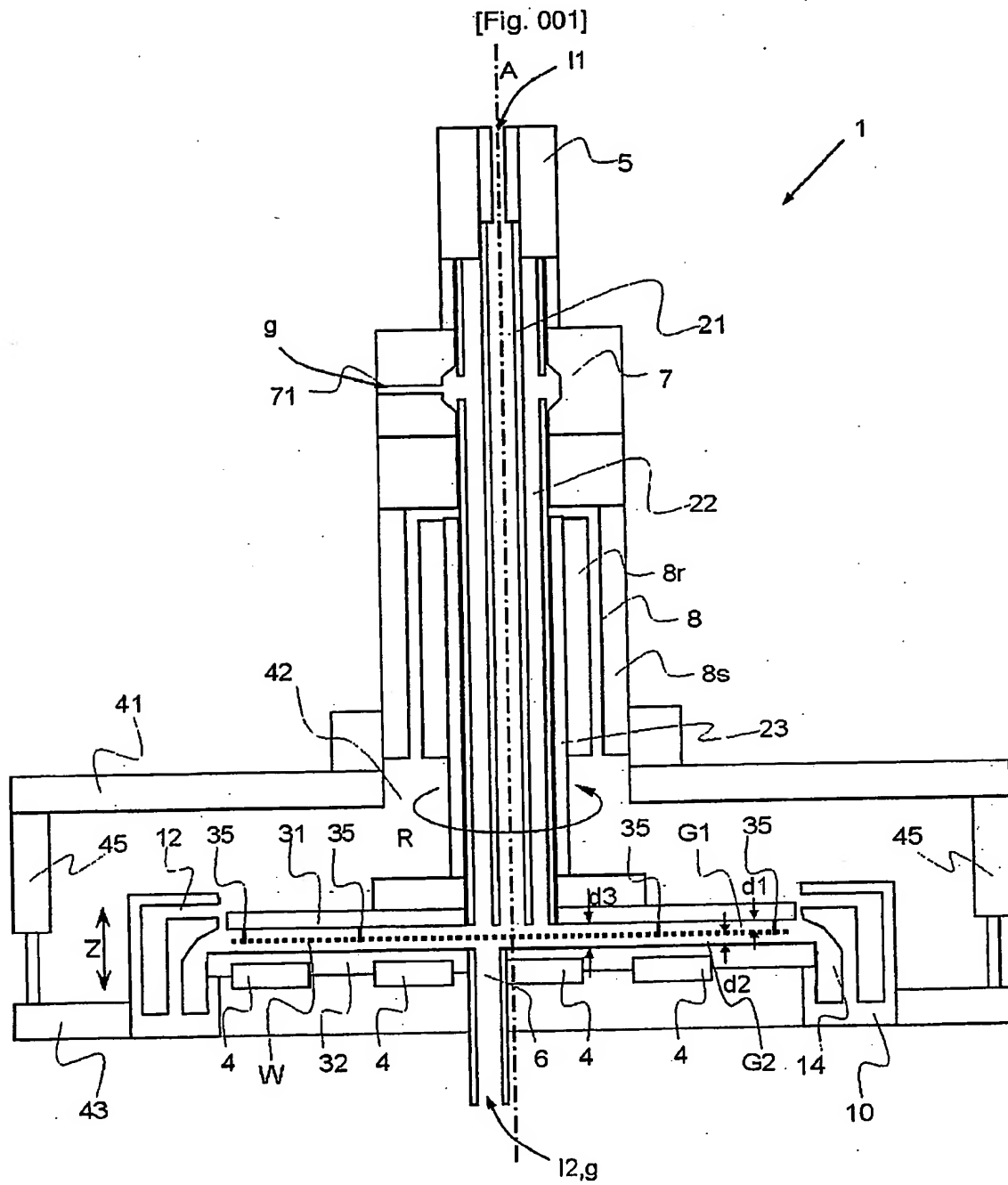
## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/051159

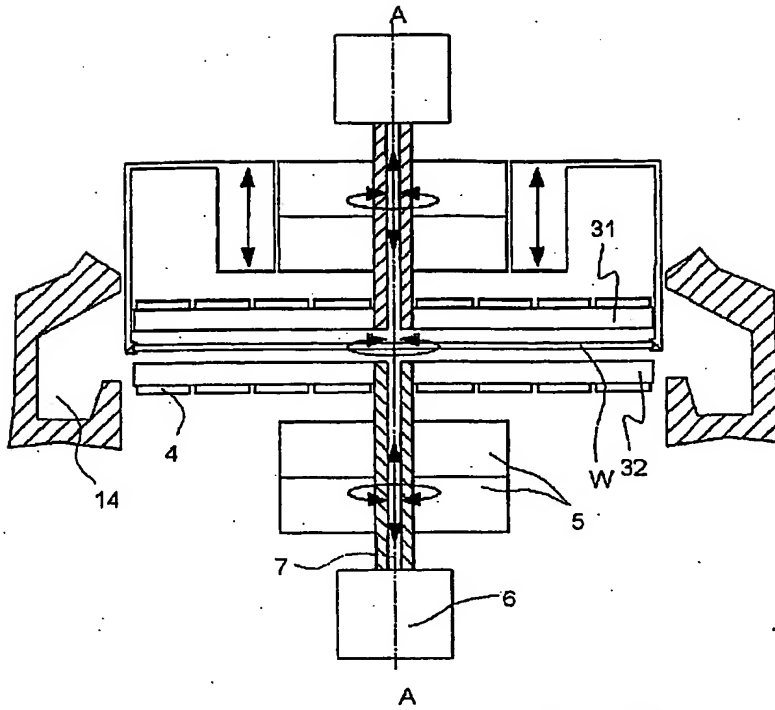
Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4401131	A	30-08-1983	DE 3217891 A1	02-12-1982
			FR 2505673 A1	19-11-1982
			GB 2099951 A , B	15-12-1982
			JP 3022691 B	27-03-1991
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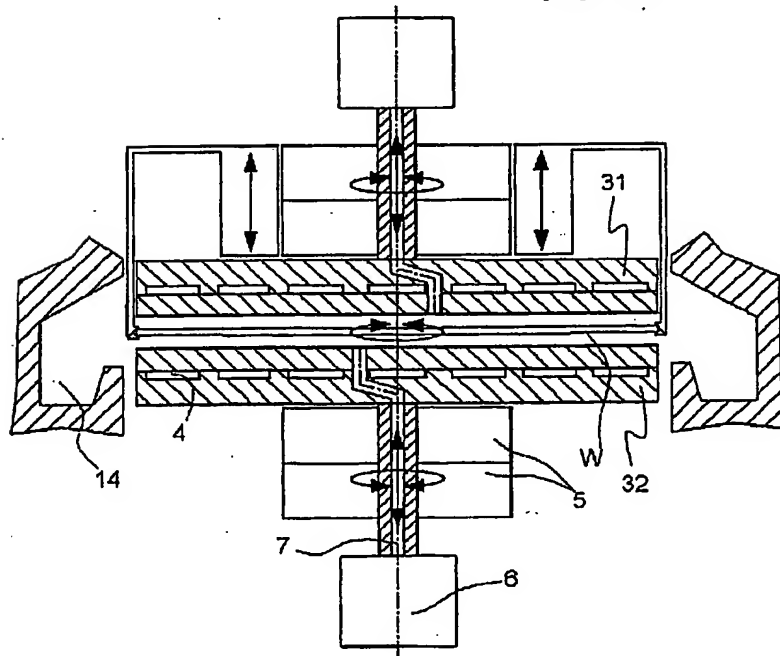
A detailed cross-sectional diagram of a semiconductor device along a vertical plane A-A'. The central part features a series of stacked rectangular blocks (7, 9, 21, 22) around a core structure (8r, 8, 8s). Above the top block is a cap layer (5) and a contact pad (11). Below the bottom block is another contact pad (23). The entire assembly sits on a substrate (41) which has a base layer (42) and a patterned layer (35). A horizontal channel or trench (10) is formed below the substrate, containing several small rectangular elements (4, 6, 14) and a larger one (32). A vertical dimension Z is indicated on the left side. Various other labels like 71, R, W, d3, 12, g, 43, and 45 point to specific features and dimensions.

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[Fig. 003]

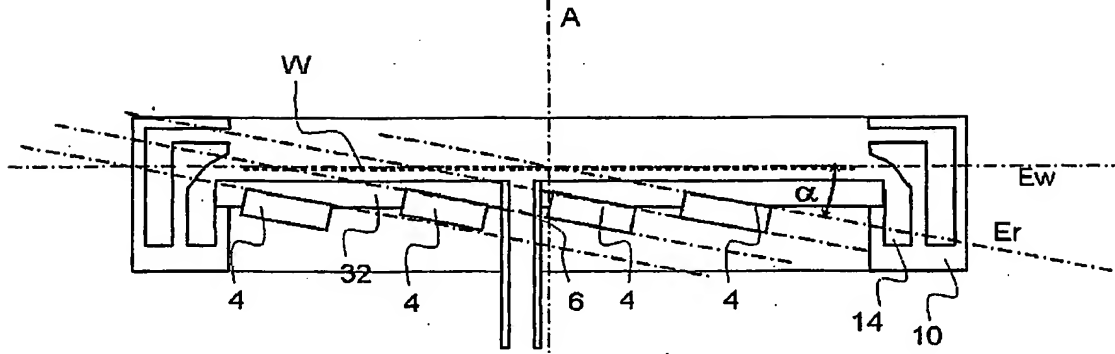


[Fig. 004]

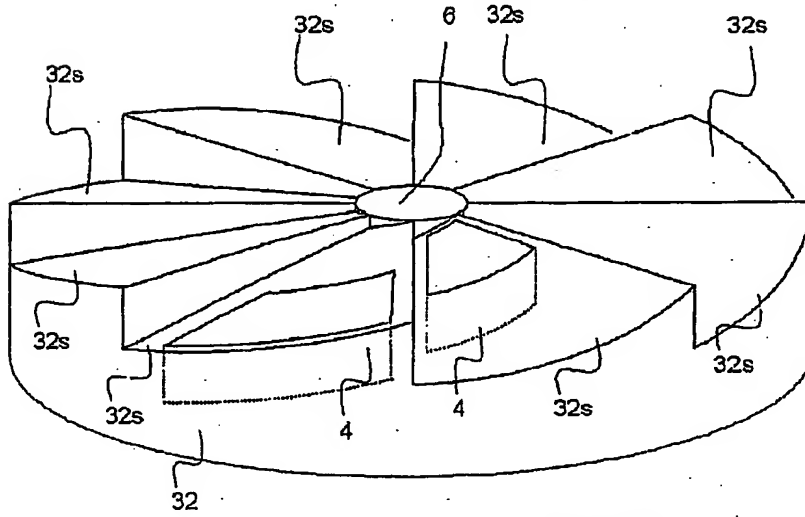


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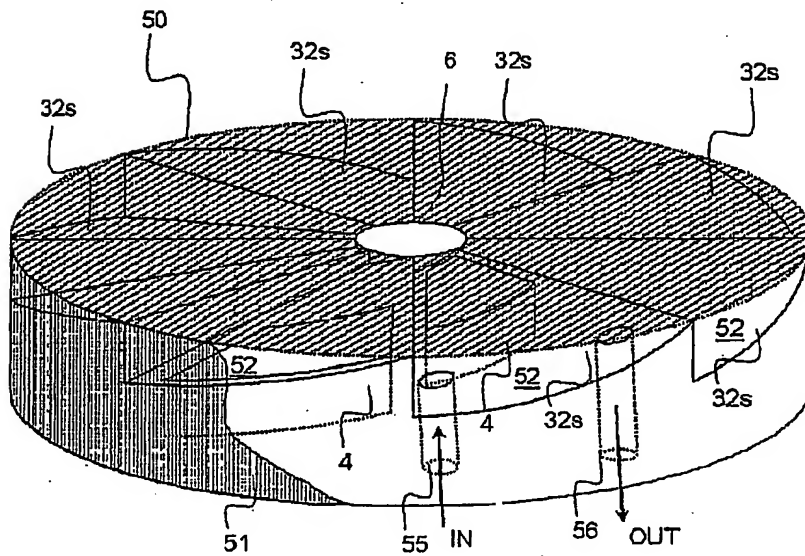
[Fig. 005]



[Fig. 006]

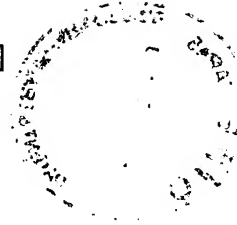


[Fig. 007]

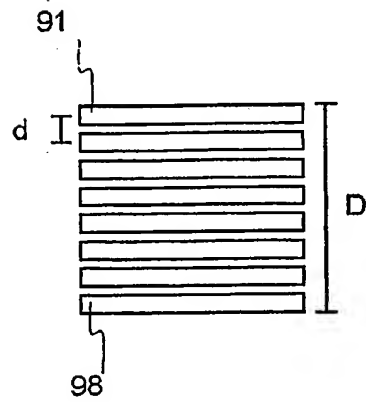
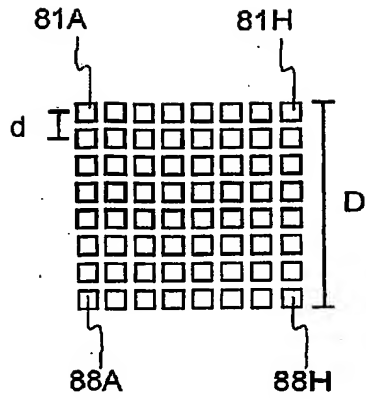


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[Fig. 008]



[Fig. 009]



[Fig. 010]

